

## **DISTANCE LEARNING AND COMPUTER-BASED TRAINING DISAM CONCEPT PAPER**

Based on a review of a modest portion of the business and educational literature, it is readily apparent that distance education and distance learning, including computer-based training (CBT), continue to expand in the workplace, military services, and academic communities.<sup>1</sup> Distance learning is frequently hailed as a means of extending the opportunity for larger numbers of people to participate in higher or continuing education.<sup>2</sup> It is not a new phenomenon; rather, the oldest and most common form of distance learning is probably homework and another distance learning mode, the correspondence course, has been utilized for several years. What is new is that the personal computer (PC) and Internet telecommunications have expanded the range and appeal of distance learning techniques.

Over the past couple of years, several defense cooperation community representatives, including those attending the annual DISAM curriculum review, have informally indicated that DISAM should similarly be exploring distance learning and CBT opportunities. Taking this into consideration, the DISAM Strategic Plan (Business Area) contains an action item to evaluate usage of CBT for specialized areas (C-2-1/4).

### **TENTATIVE DISAM CONCEPT:**

During the next three years, DISAM will take the following approach with respect to distance learning and CBT:

- Gradually and systematically increase the expertise of selected DISAM faculty and staff personnel with respect to distance learning and CBT technologies, including sending certain personnel to training to improve their technological skills.
- Continue to look at other organizations' use of distance learning and CBT to use lessons learned and benchmarking to the maximum extent possible.
- Develop focused and manageable distance learning course(s) and CBT modules, in an iterative process while balancing other DISAM mission priorities, using the data

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<sup>1</sup>Definitions: *Distance learning* is any formal educational process that occurs with the teacher and the student separated by either time or distance. The distance education process employs media in many forums and to varying extents, including postal mail, e-mail, facsimile, radio, television, satellite broadcasts, videotapes, computer-based training (CBT), teleconferencing, Intranets, and the Internet, including the World Wide Web (WWW). In essence, the distance learning technological spectrum ranges from mail-based correspondence courses at the lower level, to interactive web sites and animated CBT applications at the higher level. *CBT* involves computer applications that cause learning through the use of graphics, audio, video, and text-based material.

<sup>2</sup> Some one million students will take courses in a distance-learning format in 1999 and the number is expected to double by 2002. (Source: *Business Week*, September 1999, p. 90)

from a survey to be administered to defense security cooperation community personnel as a means of establishing future direction and relative priorities.

## **INITIAL DISAM ACTIONS TO DATE:**

**Preliminary Assessment.** As result of this interest and in consonance with the DISAM Strategic Plan, DISAM reviewed some existing CBT applications being used by the Navy and the U.S. Army Security Assistance Command (USASAC) as well as software to track course lesson progress and completion status. In addition, DISAM has looked at various developmental software applications (e.g., Macromedia Author Ware, Asymetrix Toolbook, etc.). In January 2000, DISAM acquired a copy of the Department of Housing and Urban Development (HUD) Community 2020 Planning Software CD-ROM training package, which won a CBT technology award in 1999; this software is being evaluated for possible benchmarking.

**Initial Prototype Projects.** While it is recognized that a defense security cooperation community survey is essential to assessing the extent and pace of DISAM distance learning, DISAM decided to get itself initially better prepared by starting two relatively modest, yet representative, prototype projects in 1999. These include:

- *Virtual Classroom Project.* A “traditional classroom” can be described, in part, as communication system where an instructor and students come together, in a space surrounded by walls, to enter into a learning environment. By contract, a “virtual classroom” is a system that provides the same opportunities for the teaching and learning process, but beyond the physical limits of the traditional classroom’s walls. Within this context, DISAM has started the development of future additional link on its web page (<http://disam.osd.mil>) that will take a prospective student to a course registration format. Upon registration, the student would follow a lesson advance sheet and read, at his or her own pace within specified overall course completion parameters (e.g., six months), hyperlinked sections (chapters) of the DISAM textbook, *The Management of Security Assistance*. In order to assess and reinforce learning, the student would take periodic on-line quizzes, and complete on-line mid-term and final examinations. In addition, the student would have access to one or more DISAM faculty members by e-mail or telephone in order to have personal interaction, as desired. Upon successful completion, the student’s organization would receive a diploma to be presented to the student. Successful completion by the virtual classroom method would be comparable to attending the Security Assistance Management – CONUS Orientation (SAM-CO) course in residence.

One advantage of this virtual classroom approach is that it is not dependent on high-level technology. Rather, the technology is generally limited to hypertext markup language (HTML) and the static graphics already embedded within the DISAM textbook. Moreover, the DISAM textbook approach appears to be substantively comparable to the way in which certain Defense Acquisition University courses are offered in a distance-learning format. In fact, it is stated in the educational literature that, in many respects, a

distance-learning course can be thought of as a set of carefully constructed homework assignments with appropriate assignment tracking and evaluation techniques.

- *Computer-Based Training (CBT) Graphic/Animated Module Project.* While a low-technology approach has the potential of getting the distance-learning effort initiated, educational research shows that students have attention spans of 10 to 18 minutes. Thus, it is desirable to include activities to periodically reengage students, including employing a variety of distance-learning means (e.g., animation). Thus, as a more technologically advanced project, DISAM has started developing short CBT modules with graphics and animation. Such modules could augment the virtual classroom project described above or further offer a means for DISAM graduates to review the latest information relative to distinct processes (e.g., FMS transportation). While graphic/animated modules offer greater potential for student interest, they are more time consuming to develop and are harder to run from an on-line web site due to the slowness of Internet connections. In light of this, a graphic-intensive CBT application would best run from a CD-ROM and on a computer with sufficient memory and speed.

DISAM is initially looking at developing a graphic CBT module showing the processing of a Foreign Military Sales (FMS) Letter of Offer and Request (LOR). The module would, for instance, reinforce the point that significant military equipment (SME) requests require a U.S. country team assessment and recommendation. Such approach is consistent with needs briefly verbalized by the USASAC community.

## **ISSUES:**

**Client Needs Assessment.** The initial step, before engaging in any significant distance learning or CBT undertaking, is to assess the needs of the customer base. This can be accomplished, in part, through a survey of the defense security cooperation community.

**Planning and Design of the Virtual Classroom.** Once customer needs have been identified and senior management has decided to devote sufficient resources to make such efforts possible, certain questions have to be answered, such as:

- What are the educational goals?
- How will these goals be accomplished?
- What approaches will be used to accomplish a given goal?
- What are the minimal hardware/telecommunications needs for the client?

As part of the design planning for the virtual classroom, there are certain considerations for Web-based instructional modules:

- Determining how numerous (perhaps hundreds) of HTML pages will be structured.
- Providing a consistent "look-and-feel" for the Web pages.
- Designing a consistent layout for a course.
- Determining the mixture of textual HTML and graphical/animated materials.

**Distance-Learning Usage and Student Dynamics.** While distance learning offers great potential, there is general agreement within the educational community that distance learning is not going to replace the traditional classroom in the near future. Rather, over time, education will likely be a mixture of conventional classroom work and distance learning. The classroom offers face-to-face interaction with instructors and other students that cannot be replicated in distance education. Moreover, students often continue the educational dialogue into the evening through study groups or other interaction. DISAM resident courses also offer students the opportunity to use pre-configured computers with specialized software programs and to access the library.

In addition, distance learning requires a high level of initiative and self-discipline on the part of the individual student. Although distance learning has its "asynchronous" feature (meaning it can essentially be done at the student's chosen time), it is generally a harder, not easier, way to accomplish learning. Due to this and other frustrations, there is a high dropout rate for distance learning. In fact, the better distance-learning students tend to be more dedicated and older than the average students on college campuses. Looking at the defense cooperation community, there is also the element of competition for *time*. Based on DISAM's experience with on-site courses (where students frequently slip back to their offices, often missing portions of class instruction), we expect that it will be a genuine challenge for supervisors and members of the workforce to allocate the on-the-job time for distance learning. In fact, students comment that one major advantage of the DISAM resident program is that it gets them away from the office (and their family) where they can focus on a course and homework.

**New Talents/Infrastructure and Estimated Developmental Costs.** Distance learning, particularly if it involves student interaction with instructors, requires special instructor training and the development of a different mindset. The more interactive distance learning is, the more it resembles a seminar instead of a lecture. In most cases, that requires a greater emphasis on coaching and facilitation on the part of the instructor.

Distance-learning software development also requires a range of new skills on the part of the educational institution. Creating and maintaining a Web-based course is not a one-person effort. While skills vary depending on technological complexity, there is a need for trained personnel to accomplish graphics and media creation, digitization and navigation, Web-based programming, and instructional design. Due to the need for specialized skills and the premium of DISAM faculty and staff time, there may be the need to look for outsourcing options along with in-house development.

**Maintenance of a Distance-Learning Database and Network.** Design of virtual classroom modules is only the first step. There is the need for sustainment as students enroll in on-line classes or wish to receive credit for completing certain modules. Also, there is the need to maintain historic registrar records, showing student accomplishments, particularly if certain distance-learning courses are considered to be prerequisites (e.g., CONUS Orientation, SAM-CO) for more advanced DISAM courses (e.g., Case Management, SAM-CM). Faculty will need to allocate time to assist distance-learning students who need extra assistance through telephone calls or e-mails.

**Defense Security Cooperation Community Clearing House.** Based on our observations, several defense security cooperation community activities appear to be experimenting with distance learning, principally CBT, projects. It is expected that this experimentation will increase in the near future, often with use of contractor support. While such innovation has its obvious advantages, there appears to be little coordination among activities to share products or best practices. In the spirit of the Deputy Secretary of Defense memorandum of 13 December 1999 (Subject: Foreign Military Sales Financial Management), it may be beneficial for DISAM to act as a clearinghouse as well as a repository for distance learning and CBT best practices within the defense security cooperation community.

### **RECOMMENDATIONS:**

1. DISAM continue to develop and test the prototype projects and discuss the progress relating thereto at the annual curriculum review.
2. DISAM use the curriculum review committee to validate a survey on distance learning and CBT to be given by the Spring 2000 to applicable members of the defense security cooperation community.
3. DISAM use the survey results, together with its contacts with other expert sources (e.g., other schools), to provide a plan of further action to Director, DSCA.
4. DISAM serve as a clearinghouse and repository of best practices relative to distance learning and CBT on behalf of the defense security cooperation community.

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